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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/824,253

04/14/2004

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13768.1064

6426

47973 7590 12/18/2008
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EXAMINER

LEE, MARINA

ART UNIT

PAPER NUMBER

2192

MAIL DATE

DELIVERY MODE

12/18/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/824,253	Applicant(s) RAJAGOPAL ET AL.	
	Examiner MARINA LEE	Art Unit 2192	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 September 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 6-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 6-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on September 24, 2008 has been entered.

2. This action is responsive to Amendment filed on September 24, 2008. Claims 1, 8, 11, and 15 have been amended. Claim 5 was previously cancelled. No claims have been added. Thus, Claims 1-4 and 6-22 are presented for examination.

Prior Art's Arguments – Rejections

3. Applicant's arguments filed on September 29, 2008, especially on page 7-11 of Remarks, with respect to new claim limitation "a ClrElement base class..., the ClrElement base class comprising data members Attribute Declaration, DocSummary, DocRemarks, IsEditable, IsInjected, IsCodeParseable, and IsFromReferenceAssemblies..", currently recites per independent claims 1, 11, and 15 have been fully considered but they are moot in view of new art rejection (Barry Cornelius, art of record, "Comparing .NET with Java", University of Oxford (2002)) as will be detail addressed under the item (8) below.

Claim Objections

4. Claims 6 and 7 are objected to because of the following informalities:

As per claims 6 and 7 (line1), recite to include "medium of *claim 5*" should be changed to --medium of *claim 1*--. Appropriate correction is required.

Claim Rejections - 35 USC § 101

5. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

6. Claims 1-4 and 6-8 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

As to claim 1, recites "A computer-readable medium having stored thereon a data structure for a type system... the data structure comprising:

- a) a base class for capturing...
- b) at least one controller object...
- c) a first class providing a level of abstraction between a second class and a third class....".

The "data structure" here as presently drafted merely amount to a non-functional descriptive material, because of the following reasons:

At line 3, recites the limitation "providing requested services on an artifact". Within this limitation, *there is unclear of what type of (service) is being requested*.

At lines 10-11, since there is no specifying the type of service being requested; therefore, the limitation "*validating the requested service*" raised an unclear issue of "what (type of service) is being *validated*".

At lines 12-13, the limitation "c) a first set of class providing a level of abstraction between a second class and a third class and the third class searchable the first class",

Art Unit: 2192

there is no correlated relationship between the “c) a first set of class...” to the embodiment of the claim limitation (e.g., a) a ClrElement... and/or b) at least...).

As of the forgoing discussion above, the “data structure” in the claim is non-functional descriptive material as there is no “act” actually being performed such as “unclear of what is being request”, “what is being validated”, and “how item c) related to the item a and/or b) –See *MPEP 2106.01(II)*).

Claims 2-4 and 6-8 recite limitations that do not cure the deficiency of the base claim 1, which regarding to the rejection of non-statutory under 35 USC 101. Therefore, they are also rejected for the same reasons as have been addressed above.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1-4 and 6-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over by Iborra et al., (U.S. 2002/0100014 A1 of record – hereinafter Iborra) in view of Barry Cornelius, “Comparing .NET with Java” of record hereinafter – Cornelius, *Computing Service, University of Oxford*, Dated October 29, 2002.

As to claim 1, a computer-readable medium (e.g., *floppy disk* – see page 6, [0075]) encoded with a data structure, the data structure for a type system at least implemented within a computing environment, and the data structure providing

Art Unit: 2192

requested service on an artifact in the type system— (e.g., *modifying element (type) in the Conceptual Model of automatic software production system 202 (fig. 2)* – See at least [0201] & [0081]), the data structure comprising:

a) a base class for capturing common functionality of objects of the type system (e.g., *Conceptual Model produce in UML modeling by CASE TOOL 210*). – See (step 200 and 210, Fig. 1, page 7: [0082]: 1-11, and CASE Modeler section begin at page 7:[0085] and following).

b) at least one controller object, the controller object in communication with the base class, the at least one controller object validating the requested services based on a set of rules associated with a programming language— (e.g., *Validator 220 is checking the conceptual model elements based upon the formal specification for completeness and correctness – see at least [0082], [0154], [0160-0161], [0197-0218]*); and

c) a first class providing a level of abstraction between a second class and a third class, the second and the third class searchable by the first class— (e.g., *aggregation and inheritance classes, which provided references or dependency between classes of model- see at least page 8: [0093] and [0089] with emphasis added*).

It is noted that Iborra discloses *Conceptual model (e.g., object model 300 (fig. 3) – see at least [0097] & [0088]) is being translated to various high level target third generation programming language such as C, C++, or Java – See at least Iborra [0198] with emphasis added*. But, Iborra does not explicitly disclose that the Conceptual Model (e.g., object model 300) is ClrElement base class, the ClrElement base class

Art Unit: 2192

comprising data members AttributeDeclaration, DocSummary, DocRemarks, IsEditable, IsInjected, IsCodeParseable, and IsFromReferenceAssemblies. However, Cornelius, in an analogous art, discloses “Microsoft providing .Net compilers for several programming languages: managed C++, Visual Basic.Net, Jscript and C#. In addition, other people/companies are producing .NET compilers for other language including COBOL, Eiffel ... A .NET compiler writer can rely on CLR (Common Language Runtime” for a larger number of task...” – See page 1, last paragraph and page 2, paragraph 1.

Thus, it would have been obvious to one ordinary skill in the art at the time inventions was made to include the features/elements of .NET compiler of Cornelius in the automatic software production system 202 of Iborra for providing a convenient way of producing a common language runtime for each individual target programming language for as seen in Cornelius (e.g., Section 2.2, and Section 1).

As to claim 11, Iborra discloses a method of modifying an artifact for use in a type system meta-model – (e.g., *modifying element (type) in the Conceptual Model of automatic software production system 202 (fig. 2)* – See at least [0201] & [0081] and page 23, [0457] and [0468]), the method comprising:

a) receiving a request from an application programming interface to modify an artifact in the type system meta-model –(e.g., *modifying element (type) in the Conceptual Model of automatic software production system 202 (fig. 2)* – See at least [0201] & [0081] and page 23, [0457] and [0468]), wherein the type system meta-model comprises a base class for capturing common functionality of objects of type system (e.g., Conceptual Model produce in UML modeling by CASE TOOL 210). – See (step

200 and 210, Fig. 1, page 7: [0082]: 1-11, and CASE Modeler section begin at page 7:[0085] and following), and the type system meta-model includes a first class providing a level of abstraction between a second class and a third class, the second class and the third class searchable by the first class— (*e.g., aggregation and inheritance classes, which provided references or dependency between classes of model- see at least page 8: [0093] and [0089] with emphasis added*);

b) in response to issuing at least one instruction to a language specific controller object, the language specific controller object validating the request based on rules associated with a programming language; and c) in response to a validated request from the language specific controller, modifying the artifact— (*e.g., Validator 220 is checking the conceptual model elements based upon the formal specification for completeness and correctness – see at least [0082], [0154], [0160-0161], [0197-0218]*). It is noted that Iborra discloses Conceptual model (*e.g., object model 300 (fig. 3) – see at least [0097] & [0088]*) is being translated to various high level target third generation programming language such as C, C++, or Java – See at least Iborra [0198] with emphasis added. But, Iborra does not explicitly disclose that the Conceptual Model (*e.g., object model 300*) is ClrElement base class, the ClrElement base class comprising data members AttributeDeclaration, DocSummary, DocRemarks, IsEditable, IsInjected, IsCodeParseable, and IsFromReferenceAssemblies. However, Cornelius, in an analogous art, discloses “Microsoft providing .Net compilers for several programming languages: managed C++, Visual Basic.Net, Jscript and C#. In addition, other people/companies are producing .NET compilers for other language including COBOL,

Art Unit: 2192

Eiffel ... A .NET compiler writer can rely on CLR (Common Language Runtime” for a larger number of task...” – See *page 1, last paragraph and page 2, paragraph 1.*

Thus, it would have been obvious to one ordinary skill in the art at the time inventions was made to include the features/elements of .NET compiler of Cornelius in the automatic software production system 202 of Iborra for providing a convenient way of producing a common language runtime for each individual target programming language for as seen in Cornelius (*e.g., Section 2.2, and Section 1*).

As to claim 15, Iborra discloses a method of creating an artifact for use in a type system meta-model (*e.g., creating element (type) in the Conceptual Model of automatic software production system 202 (fig. 2)* – See at least [0201] & [0081] and page 23, [0457] and [0468]), the method comprising:

a) receiving a request from an application programming interface to modify an artifact in the type system meta-model –(*e.g., modifying element (type) in the Conceptual Model of automatic software production system 202 (fig. 2)* – See at least [0201] & [0081] and page 23, [0457] and [0468]), wherein the type system meta-model comprises a base class for capturing common functionality of objects of type system (*e.g., Conceptual Model produce in UML modeling by CASE TOOL 210*). – See (step 200 and 210, Fig. 1, page 7: [0082]: 1-11, and CASE Modeler section begin at page 7:[0085] and following), and the type system meta-model includes a first class providing a level of abstraction between a second class and a third class, the second class and the third class searchable by the first class— (*e.g., aggregation and inheritance classes,*

Art Unit: 2192

which provided references or dependency between classes of model- see at least page 8: [0093] and [0089] with emphasis added);

b) in response to issuing at least one instruction to a language specific controller object, the language specific controller object validating the request based on rules associated with a programming language; and c) in response to a validated request from the language specific controller, creating the artifact— *(e.g., Validator 220 is checking the conceptual model elements based upon the formal specification for completeness and correctness – see at least [0082], [0154], [0160-0161], [0197-0218]).* It is noted that Iborra discloses Conceptual model *(e.g., object model 300 (fig. 3) – see at least [0097] & [0088])* is being translated to various high level target third generation programming language such as C, C++, or Java – *See at least Iborra [0198] with emphasis added.* But, Iborra does not explicitly disclose that the Conceptual Model *(e.g., object model 300)* is ClrElement base class, the ClrElement base class comprising data members AttributeDeclaration, DocSummary, DocRemarks, IsEditable, IsInjected, IsCodeParseable, and IsFromReferenceAssemblies. However, Cornelius, in an analogous art, discloses “Microsoft providing .Net compilers for several programming languages: managed C++, Visual Basic.Net, Jscript and C#. In addition, other people/companies are producing .NET compilers for other language including COBOL, Eiffel ... A .NET compiler writer can rely on CLR (Common Language Runtime” for a larger number of task...” – *See page 1, last paragraph and page 2, paragraph 1.*

Thus, it would have been obvious to one ordinary skill in the art at the time inventions was made to include the features/elements of .NET compiler of Cornelius in

Art Unit: 2192

the automatic software production system 202 of Iborra for providing a convenient way of producing a common language runtime for each individual target programming language for as seen in Cornelius (*e.g., Section 2.2, and Section 1*).

As per claims 12 and 16, Iborra also discloses wherein the method further comprise

the step of:

d) transmitting a response to the application programming interface that the artifact has been modified (*see Iborra, at least, page 7, [0083]*).

As per claims 2, 13, and 17, Iborra further discloses wherein the artifact comprises one or a namespace, a class, an interface, an enumeration, a delegate, an attribute, a field, a property, and an event (-- see at least [0097]).

As per claims 3, 14, and 18, Iborra further discloses wherein the programming language comprise one of Visual Basic, C++, C#, and J# (*e.g., Translator 232* automatically write a complete working program for the formal specification into working code in some target computer language such as Visual Basic, C++, assembly code for any microprocessor, etc.). --See (*page 3: [0025]*).

As to claim 4, Iborra discloses further wherein the base class determines the at least one controller object to communicate with in order to validate the request services (*e.g., class definition elements of object model such as attribute is being filed first for validating the completeness and correctness of software – see at lest [0097] with emphasis added*).

As per claims 6, 19, 21, Iborra further discloses wherein the second class and the third class comprise nested classes (*e.g., classes gather into a cluster for easier to analyze or reduce the complexity of the object model view*) – see at least page 9, [0109] *with emphasis added.*

As per claims 7, 20, and 22, Iborra further discloses wherein the second class and the third class include nested namespaces (*E.g. inheritance hierarchies is a collection of class parents and children's names*) – see at least page 8, [0093] and page 9, [0108] *with emphasis added.*

As to claim 8, Iborra further discloses wherein the data structure further comprises:

d) a container for storing types in the type system (*e.g., OASIS template – See page 33, [0662]: 6-8*).

As to claim 9, Iborra further discloses wherein the requested services comprise modifying the artifact in the type system (*e.g., modifying element (type) in the Conceptual Model of automatic software production system 202 (fig. 2) – See at least [0201] & [0081], page 5, [0056], Fig. 9C, pages 20-21, [0335]-[0393], and page 5 [0063], Fig. 15, Pages13-14, [0477]-[0479]*).

As to claim 10, Iborra further discloses wherein the requested services comprise creating a new artifact in the type system (*e.g., modifying element (type) in the Conceptual Model of automatic software production system 202 (fig. 2) – See at least [0201] & [0081] and page 23, [0457] and [0468]*).

Conclusion

Art Unit: 2192

9. The prior art made of record and not relied upon is considered pertinent to application disclosure.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marina Lee whose telephone number is (571) 270-1648. The examiner can normally be reached on M-F (11:00 am to 7: 30 pm) EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Q. Dam can be reached on (571) 272-3695. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/M. L./
Examiner, Art Unit 2192

/Tuan Q. Dam/
Supervisory Patent Examiner, Art Unit 2192